



ZytoLight
CEN 18 Probe

0.2 ml

For the detection of human alpha-satellites of chromosome 18
by fluorescence *in situ* hybridization (FISH)

FOR RESEARCH USE ONLY

Product No.: Z-2007

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**Fluorescence labeled polynucleotide probe for the detection of human
alpha-satellites of chromosome 18 centromeres,
ready to use**

Product description

Content: 0.2 ml (20 reactions) CEN 18 Probe in hybridization buffer. The probe contains orange-labeled polynucleotides (ZyOrange: excitation at 547 nm and emission at 572 nm, similar to Rhodamine), which target alpha-satellite-sequences of the centromere of chromosome 18.

Product No.: Z-2007 (CEN 18 Probe)

Specificity: The CEN 18 Probe is designed to be used for the detection of chromosome 18 alpha-satellites in formalin-fixed, paraffin-embedded tissue or cells by *in situ* hybridization via FISH.

Storage/Stability: The CEN 18 Probe must be stored at -20°C in the dark (short-time storage at 4°C is possible) and is stable through the expiry date printed on the label.

Use: This product is designed for research purposes only and not for use in diagnostic applications.

Safety Precautions: Read the operating instructions prior to use!
Do not use the reagents after the expiry date has been reached!
This product contains substances (in low concentrations and volumes) that are harmful to health (formamide, kathon). Avoid any direct contact with the reagents. Take appropriate protective measures (use disposable gloves, protective glasses and lab garments). The following risk and safety phrases apply to: R61 May cause harm to the unborn child. S53 Avoid exposure – obtain special instructions before use. S45 In case of accident or if you feel unwell, seek

medical advice immediately (show the label, where possible)!

If reagents come into contact with skin, rinse skin immediately with copious quantities of water!

A material safety data sheet is available on request for the professional user!

Principle of the method

The presence of certain nucleic acid sequences in cells or tissues can be detected via *in situ* hybridization, using tagged DNA probes. The hybridization results in duplex formation of specific sequences present in the test object with the tagged DNA probe.

Duplex formation (with sequences of chromosome 18 alpha-satellites in the test material) is directly detected by using the tags of fluorescence-labeled polynucleotides.

Instructions

Pre-treatment (dewaxing, proteolysis, post-fixation) should be carried out according to the needs of the user.

Denaturation and hybridization of probe:

1. Pipette 10 μ l CEN 18 Probe each onto individual samples

A gentle warming of the probe, as well as using a pipette tip which has been cut off to increase the size of the opening, can make the pipetting process easier. Avoid long exposure of the probe to light.

2. Avoiding trapped bubbles, cover the samples with a coverslip (22 mm x 22 mm). Seal the coverslip, e.g. with a layer of hot glue from an adhesive pistol or rubber cement

3. Denature the slides at 75°C ($\pm 2^\circ$ C) for 10 min, e.g. on a hot plate

Depending upon the age of the sample and variations in the fixation stage, it may be necessary to optimize the denaturing temperature (73°C-77°C).

4. Transfer the slide to a humidity chamber and hybridize overnight at 37°C (e.g. in a hybridization oven)

It is essential that the tissue/cell samples do not dry out during the hybridization step.

Further processing, such as washing and counter-staining, can be completed according to the user's needs. For a particularly user-friendly performance, we recommend the use of a *ZytoLight* FISH system (ZytoVision). These systems were also used for the confirmation of appropriateness of the CEN 18 Probe.

Results

In order to judge the specificity of the hybridization signals, every hybridization should be accompanied by controls. In an interphase nucleus of normal cells or cells without aberrations of chromosome 18 two chromosome 18-specific orange signals appear. In cells with an aneuploidy of chromosome 18, a different signal pattern or cluster is visible in interphases.

Our experts are available to answer your questions.

Literature

Waye JS and Willard HF (1987) *Nucleic Acids Res* **15**: 7549-69.

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